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FIGURE 1

CD8 α -chain sequences

NM_001768 & M27161
Homo sapiens (Human)
Complete CD8 alpha mRNA

Predicted polypeptide sequence

MALPVTALLLPLALLLHAARPSQFRVSPLDRTWNLGETVELKCQ
VLLSNPTSGCSWLFQPRGAAASPTFLLYLSQNKPKAAEGLDTRFSGKRLGDTFVLT
SDFRRENEGYYFCSALSNSIMYFSHFVPVFLPAKPTTTPAPRPPTPAPTIASQPLSLR
PEACRPAAGGAVHTRGLDFACDIYWAPLAGTCGVLLLSLVITLYCNHRNRRRVCKCP
RPVVKSGDKPSLSARYV

mRNA

1 gaaatcaggc tccgggccgg ccgaagggcg caactttccc cctcggcgc ccacccggct
61 cccgcgcgcc tcccctcgc cccgagctc gagccaagca gcgtcctggg gagcgcgtca
121 tggccttacc agtgaccgcc ttgctcctgc cgctggcctt gctgctccac gccgccaggc
181 cgagccagtt ccgggtgtcg ccgctggatc ggacctggaa cctgggcgag acagtggagc
241 tgaagtcca ggtgctgctg tccaaccga cgtcgggctg ctgctggctc ttccagccgc
301 gcggcgccgc cgccagtcac accttctcc tataccttc caaaaacaag cccaaggcgg
361 ccgaggggct ggacaccag cggttctcg gcaagaggtt gggggacacc ttgtcctca
421 cctgagcga ctccgccga gagaacgagg gctactatt ctgctggcc ctgagcaact
481 ccatcatgta ctccagccac ttctgcccg tcttctgcc agcgaagccc accacgacgc
541 cagcgccgcg accaccaaca ccggcgccca ccatcgctc gcagcccctg tccctgcgcc
601 cagaggcgtg ccggccagcg gcggggggcg cagtgcacac gagggggctg gacttcgcct
661 gtgatatcta catctggcg ccttggccg ggacttggg ggtccttc ctgtcactgg
721 ttatcacct ttactgcaac cacaggaacc gaagacgtg ttgcaaatgt ccccgccctg
781 tggtaaaatc gggagacaag ccagccctt cggcgagata cgtctaacc ttgcaacag
841 ccactacatt actcaaaact gagatcctc ctttgaggg agcaagtcct tcccttcat
901 tttccagt ctctccct gtgtattcat tctatgatt attatttag tgggggcggg
961 gtgggaaaga ttacttttc ttatgtgt tgacgggaaa caaaactagg taaaatctac
1021 agtacaccac aaggtcaca atactgtgt gcgcacatc cggtagggcg tggaaagggg
1081 caggccagag ctaccgcag agttctcaga atcatgctga gagagctgga ggcacccatg
1141 ccatctcaac ctctccccg cccgtttac aaagggggag gctaaagccc agagacagct
1201 tgatcaaagg cacacagca gtcagggtg gagcagtagc tggagggacc ttgtctcca
1261 gtcagggtc ctctctcca caccattcag gtcttctt cggaggcccc tgtctcagg

FIGURE 1

1321 tgagggtgctt gaggctccaa cggcaaggga acaagtactt ctgatacct gggatactgt
1381 gcccagagcc tcgaggaggt aatgaattaa agaagagaac tgccttggc agagttctat
1441 aatgtaaaca atacagact tttttttt ataatacagc ctaaaattgt atagacctaa
1501 aataaaatga agtggtagc ttaacctgg aaatgaatc cctctatctc taaagaaaat
1561 ctctgtgaaa ccctatgtg gaggcggaat tgctctcca gccctgcat tgcagagggg
1621 cccatgaaag aggacaggct accccttac aaatagaatt tgagcatcag tgaggtaaa
1681 ctaaggccct ctgaatctc tgaattgag atacaaacat gttcctggga tcatgatga
1741 cttttatac ttgtaaaga caattgttg agagccctc acacagccct ggcctctgct
1801 caactagcag atacagggat gaggcagacc tgactctctt aaggaggctg agagcccaaa
1861 ctgctgtccc aaacatgcac ttccttgctt aaggtaggt acaagcaatg cctgccatt
1921 ggagagaaaa aacttaagta gataaggaaa taagaaccac tcataattct tcaccttagg
1981 aataatctcc tgtaatatg gtgtacattc ttcctgatta tttctacac atacatgtaa
2041 aatatgtctt tctttttaa ataggggtgt actatgctgt tatgagtggc ttaatgaat
2101 aaacattgt agcatcctct ttaatgggta aacagcaaaa aaaaaaaaaa aaaaaaaaaa
2161 aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa
2221 aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa a

FIGURE 1

NM_171827

Homo sapiens secreted protein derived from alternate transcript

Predicted polypeptide

MALPVTALLLPLALLLHAARPSQFRVSPLDRTWNLGETVELKCQVLLSNPTSGCSWLFQPRGAAASPTFL
LYLSQNKPKAAEGLDTQRFSGKRLGDTFVLTLSDFRRENEGYYFCSALSNSIMYFSHFVPVFLPAKPTTT
PAPRPPTPAPTIASQPLSLRPEACRPAAGGAGNRRRVCKCPRPVKSGDKPSLSARYV

mRNA

1 gaaatcaggc tccgggcccg ccgaagggcg caactttccc cctcggcgc cccaccggct
61 cccgcgcgcc tcccctcgc cccgagcttc gagccaagca gcgtcctggg gagcgcgtca
121 tggccttacc agtgaccgcc ttgctctgc cgctggcctt gctgctccac gccgccaggc
181 cgagccagtt ccgggtgtcg ccgctggatc ggacctggaa cctgggagac acagtggagc
241 tgaagtcca ggtgctgtg tccaaccga cgtcgggctg ctgctggctc ttccagccgc
301 gcgggcgcgc cgccagtccc accttctcc tatacctctc caaaacaag cccaaggcgg
361 ccgaggggct ggacaccag cggtctcgg gcaagaggtt gggggacacc ttctctca
421 cctgagcga ctccgccga gagaacgagg gctactatt ctgctggcc ctgagcaact
481 ccatcatgta ctacgccac ttctgcccg tctctgcc agcgaagccc accacgacgc
541 cagcgcgcgc accaccaaca ccggcgccca ccatcgctc gcagcccctg tccctgcgc
601 cagaggcgtg ccggccagcg gcggggggcg cagggaaccg aagacgtgt tgcaaagtgc
661 cccggcctgt ggtcaaatcg ggagacaagc ccagccttc ggcgagatac gtctaaccct
721 gtgaacagc cactacatta ctcaaactg agatcctcc tttgaggga gcaagtcct
781 cccttcatt tttccagtc ttctccctg tctatcatt ctcatgata ttatttagt
841 gggggcgggg tgggaaagat tacttttct ttatgtgtt gacgggaaac aaaactaggt
901 aaaatctaca gtacaccaca agggtcaca tactgtgtg cgcacatgc ggtagggcgt
961 ggaaaggggc aggcagagc taccgcaga gtctcagaa tcatgctgag agagctggag
1021 gcacccatgc catctcaacc tctccccgc ccgtttaca aagggggagg cttaaagcca
1081 gagacagct gatcaaaggc acacagcaag tcagggttg agcagtagct ggagggacct
1141 tctctccag ctgagggtc ttctccac accattcagg tcttcttc cgaggccct
1201 gtctcagggt gagggtctg agtctcaac ggcaaggga caagtacttc ttgatacctg
1261 ggatactgtg ccagagcct cgaggaggta atgaataaa gaagagaact gccttggca
1321 gaggttcata atgtaacaa tatcagact ttttttta taatcaagcc taaaattgta
1381 tagacctaaa ataaaatgaa gtgtgagct taacctgga aatgaatcc ctctatctt
1441 aaagaaaatc tctgtgaaac ccctatgag aggcggaatt gctctccag cccttgcat
1501 gcagaggggc ccatgaaaga ggacaggcta ccccttaca aatagaattt gagcatcagt
1561 gaggttaaac taaggccctc ttgaatctt gaatttgaga tacaacatg ttctgggat
1621 cactgatgac ttttatact ttgtaaagac aattgttga gagccctca cacagccctg
1681 gcctctgctc aactagcaga tacagggatg aggcagacct gactcttta aggaggctga

FIGURE 1

1741 gagcccaaac tgctgtccca aacatgcact tccttgctta aggtatggta caagcaatgc
1801 ctgcccattg gagagaaaaa acttaagtag ataaggaaat aagaaccact cataattctt
1861 caccttagga ataatctcct gttaatatgg tgtacattct tcctgattat ttctacaca
1921 tacatgtaaa atatgtcttt cttttttaa tagggttgta ctatgctgtt atgagtggct
1981 ttaatgaata aacatttgta gcacacctt taatgggtaa acagcaaaaa aaaaaaaaaa
2041 aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa
2101 aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa

FIGURE 1

X60223
Pongo pygmaeus (Orangutan)
Complete CD8 alpha mRNA

Predicted polypeptide

MALPVTALLLPLALLLHAARPSQFRVSPLDRTWNLGETVELKCQ
VLLSNPTSGCSWLFQPRGAAASPTFLLYLSQNKPKAAEGLDTRFSGKRLGDTFVLTL
SDFRRENEGYYFCSALSNSIMYFSHFVPVFLPVHTRGLDFACDIYWAPLAGTCGVLL
LSLVITLYCNHRNRRRVCKCPRPVVKSGGKPSLSERYV

mRNA

1 atggccttac ccgtgaccgc cttgctcctg ccgctggcct tgctgctcca cgccgccagg
61 ccgagccagt tccgggtgtc gccgctggat cggacctgga acctgggcga gacggtggag
121 ctgaagtgcc aggtgctgct gtccaacccg acgtctggct gctcctggct cttccagccg
181 cgtggcgccg ccgccagtcc caccttctc ctatacctct cccaaaacaa gccaaggcg
241 gccgaggggc tggacacca gcggttctcg ggcaagaggt tgggggacac cttcgtcctc
301 accctgagcg acttccgccg ggagaacgaa ggctactatt tctgctcggc cctgagcaac
361 tccatcatgt acttcagcca cttcgtgccg gtcttctgc cagtgcacac gagggggctg
421 gacttcgcct gtgatatcta catctgggcg cccttggccg ggacctgtgg ggtccttctc
481 ctgtcactgg ttatcacctt ttactgcaac cacaggaacc gaagacgtgt ttgcaaatgt
541 ccccggcctg tggtaaatc tggaggcaag ccagccttt cggagagata tgtctaa

FIGURE 1

XM_132621 & BC030679 & U34881
Mus musculus (Mouse)
Complete CD8 alpha mRNA

Predicted polypeptide

MASPLTRFLSLNLLLLGESIILGSGEAKPQAPELRIFPKKMDAE
LGQKVDLVCEVLGVSQGC SWL FQNSSSKLPQPTFVVYMASSH NKITWDEKLNSSKLF
SAMRDTNNKYVLT LNKFSKENEGYYFCSVISNSVMYFSSVVPVLQKVNSTTTKPVLRT
PSPVHPTGTSQPQRPEDCRPRGSVKGTGLDFACDIYIWAPLAGICVALLLSLIITLIC
YHRSRKRVCCKPSIACLCLKLQGS KWYESVIC SALAVSIRC NKSKSGELPLAVHLDIR
APCKNWEIAGSLVERYGKSGKHSPLSLKAVVESN

mRNA

1 atggcctcac cgttgacccg ctttctgtcg ctgaacctgc tgctgctggg tgagtcgatt
61 atcctgggga gtggagaagc taagccacag gcacccgaac tccgaatctt tccaaagaaa
121 atggacgccg aacttggtca gaaggtggac ctggtatgtg aagtgttggg gtccgtttcg
181 caaggatgct cttggctctt ccagaactcc agctccaaac tccccagacc caccttcgtt
241 gtctatatgg ctatccca caacaagata acgtgggacg agaagctgaa ttgctgaaa
301 ctgtttctg ccatgaggga cacgaataat aagtacgttc tcacctgaa caagttcagc
361 aaggaaaacg aaggctacta ttctgtctca gtcacagca actcggatg gtacttcagt
421 tctgtctg cagtccttca gaaagtgaac tctactacta ccaagccagt gctgcgaact
481 cctcacctg tgcacctac cgggacatct cagccccaga gaccagaaga ttgtcgccc
541 cgtggctcag tgaaggggac cggattggac ttgcctgtg atatttacat ctgggcaccc
601 ttggccggaa tctgcgtggc ccttctgtg tcttgatca tcacttcat ctgctaccac
661 aggagccgaa agcgtgttg caaatgtccc agtatagcat gcttgtgcct caaactgcaa
721 ggaagcaagt ggtatgaatc tgtgatctgc tcagctctgg ctgtgagcat cagatgtaac
781 aaatcaaagt caggagaact gccttagcg gtgcacctgg acatcagagc cccttgtaag
841 aactgggaaa ttgctggcag tctagtggag cggtaggta aatctggaaa acactccct
901 ctgtactga aggctgtagt agaatccaat taa

Predicted polypeptide

MDAELGQKVDLVCEVLGVSQGC SWL FQNSSSKLPQPTFVVYMA
SSH NKITWDEKLNSSKLF SAMRDTNNKYVLT LNKFSKENEGYYFCSVISNSVMYFSSV
VPVLQKVNSTTTKPVLRT PSPVHPTGTSQPQRPEDCRPRGSVKGTGLDFACDIYIWAP
LAGICVALLLSLIITLIC YHRSRKRVCCKPRPLVRQEGKPRPSEKIV

FIGURE 1

mRNA

1 cgttgacccg cttctgtcg ctgaacctgc tgctgctggg tgagtcgatt atcctgggga
61 gtggagaagc taagccacag gcacccgaac tccgaatctt tccaaagaaa atggacgccg
121 aacttggtca gaagggtggac ctggtatgtg aagtgttggg gtccgttgc caaggatgct
181 cttggctctt ccagaactcc agctccaaac tccccagcc caccttcgtt gtcctatgg
241 cttcatcca caacaagata acgtgggacg agaagctgaa ttgctgaaa ctgtttctg
301 ccatgaggga cacgaataat aagtacgttc tcacctgaa caagttcagc aaggaaaacg
361 aaggctacta ttctgtcta gtcacagca actcgggtgat gtacttcagt tctgtcgtgc
421 cagtcctca gaaagtgaac tctactacta ccaagccagt gctgcgaact ccctcacctg
481 tgcacctac cgggacatct cagccccaga gaccagaaga ttgtcggccc cgtggctcag
541 tgaaggggac cggattggac ttgcctgtg atattacat ctgggcaccc ttggccggaa
601 tctgcgtggc ccttctgctg tcttgatca tcaactcat ctgctaccac aggagccgaa
661 agcgtgttg caaatgtccc aggccgctag tcagacagga aggcaagccc agacctcag
721 agaaaattgt gtaaaatggc accgccagga agctacaact actacatgac ttcagatctc
781 ttctgcaag aggccaggcc ctcttttc aagtttctg ctgtctatg tattgccctc
841 tgtattgtt tagtaggggt gtgatgggga cagttcctt ttcttatga attctcttg
901 acacaaagca tacttgtatg catacaatgg gagtaatgag cagactgtaa caccagagct
961 agttccagtt tcgggtcca tgcgctggt ggcctcagca cccactgat ataaatctcc
1021 tgtctgccc tcatatagaa gaagtgaag atcagagggtg gaaacagcag gatctgtaga
1081 cccggagaga acccaagcta gaggaacct cactgactgg tgcagggatc tcaccccat
1141 cccctgagct ctctgttag gtatgtgtct ttatgatagc atgctgtgc ctcaaactgc
1201 aaggaagcaa gtggtatgaa tctgtgatct gtcagctct ggctgtgagc atcagatgta
1261 acaaatcaaa gtcaggagaa ctgcctttag cgggtcacct ggacatcaga gcccttgta
1321 agaactggga aattgctggc agtctagtg agcggtagc taaatctgga aaacactccc
1381 ctctgtcact gaaggctgta gtagaatcca attaaagcta ttcaaaccac aaaaaaaaaa
1441 aaaaaaaaaa aa

Predicted polypeptide

MASPLTRFLSLNLLMGESIILGSGEAKPQAPELRIFPKKMDAE
LGQKVDLVCEVLGVSQGC SWLFQNSSSKLPQPTFVYMASSHNKITWDEKLNSSKLF
SAVRDTNNKYVLT LNKF SKENEGYYFCSVISNSVMYFSSVVPVLQKVNSTTTKPVLR
T
PSPVHPTGTSQPQRPEDCRPRGSVKGTGLDFACDIYWAPLAGICVAPLLSLIITLIC
YHRSRKRVCCKPRPLVRQEGKPRPSEKIV

mRNA

FIGURE 1

1 atggcctcac cgttgacccg ctttctgtcg ctgaacctgc tgctgatggg tgagtcgatt
61 atcctgggga gtggagaagc taagccacag gcacccgaac tccgaatctt tccaaagaaa
121 atggacgccg aacttgcca gaaggtggac ctggtatgtg aagtgttggg gtccgtttcg
181 caaggatgct cttggctctt ccagaactcc agctocaaac tccccagcc caccttcgtt
241 gtctatatgg ctcatccca caacaagata acgtgggacg agaagctgaa ttgctgaaa
301 ctgttttctg ccgtgaggga cacgaataat aagtacgttc tcaccctgaa caagtcagc
361 aaggaaaacg aaggctacta ttctgtca gtcacagca actcgggtgat gtacttcagt
421 tctgtcgtgc cagtcttca gaaagtgaac tctactacta ccaagccagt gctgcgaact
481 ccctcacctg tgcaccctac cgggacatct cagccccaga gaccagaaga ttgtcgcccc
541 cgtggctcag tgaaggggac cggattggac ttgcctgtg atatttacct ctgggcaccc
601 ttggccggaa tctgcgtggc ccctctgctg tccttgatca tcacttcat ctgctaccac
661 aggagccgaa agcgtgtttg caaatgtccc aggccgctag tcagacagga aggcaagccc
721 agaccttcag agaaaattgt gtaa

FIGURE 1

NM_031538
Rattus norvegicus (Rat)
Complete CD8 alpha mRNA

Predicted polypeptide

MASRVICFLSLNLLLLDVITRLQVSGQLQLSPKKVDAEIGQEVK
LTCEVLRDTSQGCSWLFRNSSSELLQPTFIIYVSSSRSKLNDILDPNLF SARKENNKY
ILTLSKFSTKNQGYFCSITSNSVMYFSPLVPVFQVNSIITKPVTRAPTPVPPPTGT
PRPLRPEACRPGASGSVEGMGLGFACDIYWAPLAGICAVLLLLSLVITLICCHNRNRRR
VCKCPRPLVKPRPSEKFV

mRNA

1 ccctagagcc ctactgtgac ctaaggtgct ggtgggacgc acaccatggc ctcacgggtg
61 atctgcttc tgcctgtaa cctgctactg ctggatgta tcaactaggct ccaggtttcc
121 ggacagttac agttgtcacc aaagaaagtg gacgctgaaa ttggccagga ggtgaagcta
181 acatgcgaag tgcctcgga cacttcgcaa ggaatgctct ggctcttcg gaactccagc
241 tccgaactcc tccagccac ctctcatc tatgtatct catcccgag caagctgaac
301 gatatactg atccgaatc gttctctgcc cggaaggaaa acaacaata catctcacc
361 ctgagcaagt tcagcactaa aaaccaaggc tactattct gctcaatcac cagcaactcg
421 gtgatgtact tcagtctct ggtgccggtg ttcagaaaag tgaactctat taccaccaag
481 ccggtgacgc gagctccac accagtgcct cctctacag ggacaccccg gccctacga
541 ccagaagctt gccgacccg gccgagtggt tcagtggagg gaatgggatt gggcttcgcc
601 tgcgatattt acatctgggc accctggcc ggaatctgcg cggttctct gctgtccctg
661 gtcacactc tcactgtct ccacaggaa cgaaggcgtg ttgcaaatg tccaggccc
721 cttgtcaagc ccagacctc agagaaatc gtgtaaatg gcgccactag gaagccacaa
781 ctactacatg acttcagaga ttctcaca gagaccgggc cctcctttt cagagtttc
841 tgcgtgctta tatattgcc tctgtattgt tttaggggta ggaatgggac agttccttt
901 tctttatgaa ttctcttga taaaaacat actgtatgc acacaatggg gtaaagatca
961 gactgaaca ccagagatag tccagttc aggtcagcg tagctggtg

FIGURE 1

AY303773

Cavia porcellus (Guinea Pig)

Complete CD8 alpha mRNA

Predicted polypeptide

MAPRGSAWLLLLPVALLLDAATAQGASQFRMSPRELVAQVGTKV

TLRCEVLVPNAPAGCSWLFQPRHDAKGPTFLLYHSASGTKLAPGLEQKRFSPSKSSNT

YTLTVNSFQKRDEGYFCSVSGNMMLYFSPFVPVFLPAPRTTTPPPPTTPTPSVQPT

SVRPETCVVSKGAAGARWLDLSCDVYIWAPLASTCAALLLALVITIICHRRNRQRVCK

CPRPQARSGGKPSPSGKLV

mRNA

1 gcaacttccc cactgcgcat cccctggctc ctggtggctc ctggggggct cccttcacgc
61 ctggactcca ggctctgccc tgcgccgagg agcgcgcgcc atggccccgc gaggaagcgc
121 ctggctgctg ctgctgcccg tggccctgct gctcgacgcc gccacggccc aagggtgccag
181 tcagttcoga atgtcacccc gtgaactggc cgcgcaagtc ggcaccaaag tgaccctgcg
241 ctgtgaggtg ctggtgccta acgcgcgggc gggatgctcg tggctcttc agccccgcca
301 cgacgcaaaa ggtcccacct tcctcctgta ccattcggcg tccgggacca agttggcccc
361 agggctggaa cagaagcgat tcagcccctc gaagagcagt aacacctaca ccctcacggc
421 gaacagcttc cagaagcgag acgaaggcta ctactctgc tcggtctccg gcaacatgat
481 gctctacttc agcccgttcg ttcccgcttt cctgccagct cctcgacca cgacgcccc
541 tccccctccc accacgcca cccccagcgt gcagcccacg tcggtgcgcc ccgagacgtg
601 tgtggtctct aaggcgagcag cagggtgcgag gtggctggat ctctcctgtg atgtctacat
661 ctggggcgccc ctggccagca catgcgcggc ccttctgctg gcactggta tcacgatcat
721 ctgccaccgc aggaacagac aacgcgtttg caaatgtcct agggcccaag ccagggtctg
781 aggcaaaacc agccctcag ggaagttagt ctaacaacat ggcgcccagc ctgtgcgaag
841 ccactacatg actttatact gagatcattc ctggacagc aagtgtcct ctttgggtt
901 tccagtcctt ccttcctatg tattgttct cattactatt ttagtggga tggggtggga
961 agagttgctt ttctgttaga caaaaaataa aacctgtag catctgcagc tcacaagggt
1021 cacagggtctg ttacctcaca cagggttag gtagcaagc agggctctca ggtactggaa
1081 ttactccct tccactcact tgagggtggg cagcaccac gggcattta tcctcatca
1141 tgctcctcca ccacttgag ctcatatgcc accaaagag cagtctatct aaaccaggc
1201 caaacacatg caactgcttt ttgaaccga gagcctaatt tatctcaga gaatgcaagt
1261 gctccttgt cacttatatc ttgtccatga ccttaataa atgtgctgct ttccctcaa
1321 aaaaaaaaaa

FIGURE 1

NM_174015
Bos taurus (Cow)
Complete CD8 alpha mRNA

Predicted polypeptide

MASLLTALILPLALLLLDAAKVLGSLSFMSPTQKETRLGEKVE
LQCELLQSGMATGCSWLRHIPGDDPRPTFLMYLSAQRVKLAEGLDPRHISGAKVSGTK
FQLTLSSFLQEDQGYFFCSVVSNSILYFSNFVPVFLPAKPATTPAMRPSSAAPTSAPO
TRSVSPRSEVCRTSAGSAVDTSRLDFACNIYWAPLVGTCGVLLLSLVITGICYRRNR
RRVCKCPRPVVRQGGKPNLSEKYV

mRNA

1 gaattcggat ccacatggc ctactcttg accgccctga tctgccgct ggcctgctg
61 ctgctgatg ccgccaaggt cctcgggtcg ctctcgttc ggatgtcgcc gacgcagaag
121 gagaccagac tgggcgagaa ggtggagctg caatgcgagt tgctgcagtc cggcatggcg
181 acaggggtct cctggctccg ccacataccc ggggacgacc ccagaccac ctctctaag
241 tacctctccg cccaacgggt caagctagcc gagggactgg accccagaca cattccggc
301 gccaaaggct ccggcaccaa attccagctc accctgagca gcttctcca ggaggacaa
361 ggctactatt ttgctcggg ctgtagcaac tcgatactgt acttcagtaa ctctgtgct
421 gtctcttgc cagcgaagcc ggccaccacg ccggcgatgc ggccatccag cgcggcgccc
481 accagcgcgc cgcagactag gtcgggtctc ccgcgatcag aggtgtgccc gacctcggcg
541 ggcagcgcag tggacacgag ccggctggac ttcgcctgca atatctacat ctgggtccc
601 ttggtcggga cctgcggcgt ccttctctg tcattggta tcacaggcat ctgctaccg
661 cggaaccgaa gacgtgtctg caaatgtccc aggcctgtgg tccgacaagg aggcaagccc
721 aaccttcag agaaatatg ctaacatgc gatgggcccc gtgtgacagc cactacaaga
781 ctgcgactg agaactctc tgagatcct ccttttgat ttctccctg ttccttctt
841 ctgctatta ttattttca tgggggtgg gtgggaagag ttacttttc ttattattt
901 acttgatagc aaaacaagac actcgtgtct aaggcatacc acaagggtta tcatgtgtt
961 gtgctcccat actcgggtag agggcgggcg ggccagagct accgcaagct ctattctcag
1021 aacctggctg tgagaactgg tgggggcctc ggcacccact cagccccaac ttctctcca
1081 cccattttac aaaagaggac gctgaggccc agagatgggg aacagctgga tcagagtccc
1141 agcagggtc cacacaactg agatctttt tctggaggcc tctgtctcag cgtggggagc
1201 tggatctcaa gcctcagaga actagttatt tctgaagcat ctgtgataga cccatgactg
1261 caccagagc ctcatgagg taatgaaata ggacaagaaa actgacaga gttctgtgat
1321 actgctgaac aggatcagat tattttttt ataataagc atgaaatgat acagataata
1381 ggaattctc caatgaagtg gaaggagtga actgaatgat ggaaatgag caacctgacc
1441 tctgaagaaa atctctggga aatcccagcc tggagatgt tctccagcc ctgtattgc

FIGURE 1

1501 agaaggaccc tcaaagagga gaggccaccc tctgaagca tgatttgagc gttaggaaag
1561 ttgaatggag ttcaagtctc tctaaacatt gagattccgt attcaaacaat gctcctgggt
1621 tatcgggtgag tttttatagt ttgtaaaggg agaattgtga ccgagcagct ggcacaggcc
1681 ctggcacccc aggctagcag ctgaggggaat gtgcagacac tggtagggag gctacgagcc
1741 cagctgcagc cctacaaggc atttccttcc ttactgtgtt ctgcaaaaaa tgcattgctca
1801 ctgggagaaa aaatgtagct aaggtagtaa gaatcatccg taattcttta cctcagggat
1861 aatccattgt taatattatg ggctacattc ttcttgatta tttctgtgc cctacatata
1921 aaatatataa ttttaaaaaa tgggattgca ctatgctttt ataaatggct ttaataaaca
1981 aacatttatg gcttacttct t

FIGURE 1

AY517855
Sus scrofa (Domestic pig)
Complete CD8 alpha mRNA

Predicted polypeptide

VELQCELMHSNTLTSCSWLYQKPGAASKPIFLMYLSKTRNKTAE
GLDTRYISGYKANDNFYLILHRFREEDQGYFCSFLSNSVLYFSNFMVFLPAKPTKT
PTTPPKRTPTKASHAVSVAPEVCRPSGNADPRKLDLACDLYNWAPLVGTSGILLLSL
VITIICHRNRNRRRVCKCPRPVVRQGGKASPSERFI

mRNA

1 gtggagctgc agtgcgagtt gatgcactcc aacacactga caagctgttc ctggctctac
61 cagaagccgg gggctgcctc caagcccatc ttcctcatgt acctctcaa aacccggaat
121 aagacagccg aggggctgga caccggttac atctctggtt acaaggccaa tgacaacttc
181 tacctcatcc tgcaccgctt ccgcgaggag gaccaaggct actattctg ctggttctg
241 agcaactcgg tttgtattt cagcaacttc atgtccgtct tctgccagc aaagcccacc
301 aagacgccga ctacgccacc acccaagcgg actcccacca aagcgtcgca cgccgtgtct
361 gtggccccag aggtgtgccg gccttcgggc aagcagacc cgaggaagct ggacctcgcc
421 tgtatctgt acaactgggc gcccttggtt gggacctccg gcatccttct cctgtcactg
481 gtcatcacca tcatctgcca ccgccgaac agaagacgtg ttgcaaagt tcccaggccc
541 gtggtcagac agggaggcaa ggccagccct tcagagagat tcatctaaca tggcgacatg
601 cccacgcag cagccactac aagacctcaa actgagacct ctccgggcag gagagcaagg
661 gtcccttct ttcgtttcc ccagccttc ttccttctt aagtattctt ctattatta
721 ttatttccat ggggggtggg tgggaagggt gacttttct ttgggtgtt actttaattg
781 acacaaaacg agactctatc acgtcttgg tacgccgag ggggtcgaa accgttgtc
841 tcacacacac aacggtgaag ggtggcgagg ccagagctac cgcaagctgt gttctcagaa
901 ccaggctgtg agagctggtg ggggggtggg aggccctcgg caccacaca ggccaaacct
961 ctccccctgc cccccattt acaaaggaat gaggctgagg ccagagatg ggggggtggc
1021 ggatcagagc ccagcaagg ctccaggctc atctccaca gcatttgggc ctctctcca
1081 ggggcctctg tctcagctgg gggagctgtg tctccacct caaggaaaca aggtttgctt
1141 gggcacctgt gatagactct gactgtgcc cagagccccg gggaggcaat gcagtaagtc
1201 aaggggacgt gacagaggct tacggtgcag ttgaacagga tcagatatat ttttttaat
1261 aatccagcat gaagtatat agataacagg aattcctcaa atagagtga agggctgaac
1321 tgaatcctgg aaagtgaaca acacgacctc taaaggaaat ccaatgcaa aaatctctaa
1381 gtggagacac agtggctctc ccaggggacc catgaaagag ggaagccgc cctttgcaa
1441 tatgattga gcatcgcaa agtcgaacgg aggtcgccc tctctaaat tgagatctga
1501 tatttgaacg tgctcctcg atcattgatg ggtttttg gttgttaac acagaattat
1561 gaccgagtag ctggcctccc ctggaccagc agctgtggat atggggcaga ctctgatgag

FIGURE 1

1621 gaggttagga gccagactg ctgccctcta cgcgcatttc ctctcttaac catgttgtac
1681 aagaaatgcg tgctcgctgg aagaaaaaac taaataataa gagtcacca taattcttta
1741 cttctggtat aactcattgt taatattatg gtgtacattc ttctgatta tttctatgc
1801 acgtatataa aatgtatact ttttaaaaat ggaattgtac tatgcttta gaagtggttt
1861 taataaacat ttctgctatg aaaaaaaaaa a

FIGURE 1

D16536

Felis catus (cat)

Complete CD8 alpha mRNA

Predicted polypeptide

MASPVTAQLLPLALLHAAAAAGPSPFRLSPVRVEGRLGQRVEL

QCEVLLSSAAPGCTWLFQKNEPAARPIFLAYLSRSRTKLAEEELDPKQISGQRIQDTLY

SLTLHRFRKEEEGYFFCSVVSNSVLYFSAFVPVFLPVKPTTTPAPRPPTQAPITTSQR

VSLRPGTCQPSAGSTVEASGLDLSCDIYWAPLAGTCAFLLSLVITVICNHRNRRRV

CKCPRPVVRAGGKPSPSERYV

mRNA

1 atggcctctc cggtgactgc ccagctcctg ccgctggcct tgctgcttca tgccgccgca
61 gccgccgggc cgagcccggt ccgcttatcg cccgtgaggg tggagggcag gctcgccag
121 cgggtggagc tgcagtgcga ggtgctgctg tccagcgcg cgccgggctg cacctggctc
181 ttccagaaga acgaacctgc cgccgcccc atcttctgg cgtacctc cagaagccg
241 accaagttgg ccgaggagct ggaccccaaa cagatctcg gccagaggat tcaggacacc
301 ctctacagtc tcacctgca cagattccgc aaggaggaag aaggctacta ttctgctcg
361 gtcgtgagca actccgttct gtacttcagc gccttcgtcc cggttctct gccagtcaag
421 ccaccacta cgcccgcgcc gcgaccgccc acgcaggcgc ccatcaccac gtcgcagcgg
481 gtgtctctgc gcccggggac ctgccagcct tcagcgggca gcacagtga agcaagtggg
541 ctggatttgt cctgtgacat ctacatctgg gcaccctgg ctgggacctg cgccttctt
601 ctctgtcgc tggatcacac cgtcatctgc aaccacagga accgaagacg tgttgcaaa
661 tgtccgagc ccgtggtcag agcaggaggc aagcctagcc cgtcagagag atacgtctaa
721 catggagatg ggcccatgc accagccact acaagaccaa ataaaactct ctttatgagg
781 acagt

FIGURE 1

AY065643

Sigmodon hispidus (Hispid cotton rat)

Complete CD8 alpha mRNA

Predicted polypeptide

MAPRVTRFLCLTLLLEFIAELGGSKDFEMSPKKVVAHLGKEVRL

TCEVWVSTSQGCSWLFLEHGSVKPTFLIYLSGSRNERNNKIPSTKLSGKKEDKKYTL

TLNNFAKEDEGYFCSVTSNSVVFYFSPLVSVFLPEKPTTPVPKPPTSVPPTAISRLR

PEACRPGAGTSVEKKGWDFDCDIILAPLAGLCGVLLLSLVTTLICCHNRNRKVCKCP

RPVVRQGGKPSPSGKLV

mRNA

1 ctctgcttg acctaagctg ctggtggaag cactgccatg gccccccggg tgaccgcct
61 tctgtgcctg accctgctgc tggaatttat cgctgagctc ggaggctcga aagatttcga
121 aatgtctct aagaaggtag tgcgccacct tggcaaggag gtgaggctaa catgcgaagt
181 gtgggtgtct acttcgcaag gatgctctg gctcttctg gagcatggct ccggagttaa
241 acccacttc ctcatctatc tctctgggag cgcgaacgaa cggaataaca aaataccttc
301 aactaagcta tctgggaaga aggaagacaa aaagtacacc ctacccctga ataatttgc
361 taaggaagac gaaggctact attctgctc tgcacaagc aactcggtag gtacttcag
421 tcctctctg tgggtcttc tgccagagaa acctaccaca ccagtgccga aaccaccac
481 atcagtgcc actacggcga tatctcggc cctgcgacca gaagcttgc gacctggagc
541 cggcacctca gtggagaaga agggatggga ctgcactgt gatataatca tttggcacc
601 cttagctgga ctctgtggg tcctctctg gtctctggtc accacactca tctgctgcca
661 caggaacaga aaacgagctc gcaaatgtcc caggcccgtg gtcagacaag gaggcaagcc
721 cagccctca gggaaactcg tgtaagatgg cgccaagaaa ctacaactac tacttcagag
781 acctctcat ctgagctcc agctctcct ctcaatttt tctaccttc ctatatattg
841 ttcttgtat tatttagtg ggggtaggac agggttggaa ccatttcct tcttatgaa
901 ttacattga cacaaaacaa gaccacataa tgtccacggg ataccataag ggcaggagct
961 gttgctcgt acatagcatg tgggggaagt acagaacagc tgtctgggtt ctcaggatca
1021 gtggatgatc agcaccactc tgatgatcta aatgcctgt ctgccatta tatagaagag
1081 gttgaaggc agaaatggg tgggcaggat ctgtcacca ggagagaacc caagctgacg
1141 aaatctcac tggatggctc agggaactg cctctatac ctgagttctc ttattcagg
1201 cctgtgcctg gtagtgtga ggctgagta

FIGURE 1

AJ130818
Saimiri sciureus (Common Squirrel Monkey)
Complete CD8 alpha mRNA

Predicted polypeptide

MASPV TALLLPLALLLHAARPSRFRVSPLDRTWNLGDKVELKCE
VLLSNPSSGCSWLFQKRGAAASPTFLLYISQTKPKVADGLDAQRFSGKKMGDSFILTL
RDFREEDQGFYFCSALSNSIMYFSPFVPVFLPAKPTTTPAPRPPTPEPTTASQPLSLR
PQACRPPAGGAVDTRGLDFACDIYWVPLAGTCGVLLLSLVITVYCNHRNRRRVCKCP
RPAVKSGGKPSPSERYV

mRNA

1 atggcctctc ccgtgaccgc ctgtctctg ccgctggccc tgctgtcca cgctgccagg
61 ccgagccggt tccgggtgtc gccgctggat cggacctgga acttgggcga caaggtggag
121 ctgaagtgcg aggtgtctgt gtccaaccg tctcgggct gctcgtggct ctccagaag
181 cgcggcgtg ccgccagccc cacttctc ctgtacatc cccaaaccaa gcccaagggtg
241 gccgatgggc tggacgccc gcgttctcc ggcaagaaga tgggggacag ctctattctc
301 accctgcgcg acttccgcga ggaggaccag ggcttctatt tctgtcggc cctgagcaac
361 tccatcatgt acttcagccc ctctgtccg gtcttctgc cagcgaagcc caccacgacg
421 ccagcgccgc gaccaccac accggagccc accaccggt cgcagcccct gtccctgcgt
481 ccacaggctt gccggcccc gccggggggc gcagtggaca cgagggggct ggacttgcg
541 tgtgatatc acatctgggt gccctggcc gggacctgc gggtccttct cctgtcactg
601 gtcacaccg ttattgcaa tcacaggaac cgacgacgtg ttgcaaag tccccgcct
661 gcggtcaagt ctggaggcaa gccagccct tcggagagat acgtctaa

Domains of the CD8 α -Chains

Leader

Transmembrane

Human CD8 α -Chain

Protein:

MALPVTALLL	PLALLLHAAR	PSQFRVSPLD	RTWNLGETVE	LKCQVLLSNP
TSGCSWLFQP	RGAAASPTFL	LYLSQNKPKA	AEGLDTQRFS	GKRLGDTFVL
TLSDFRRENE	GYIFCSALSN	SIMYFSHFVP	VFLPAKPTTT	PAPRPPTPAP
TIASQPLSLR	PEACRPAAGG	AVHTRGLDFA	<u>CDIYIWAPLA</u>	<u>GTCGVLLLSL</u>
<u>VITLYCNHRN</u>	RRRVCKCPRP	VVKSGDKPSL	SARYV	

mRNA - coding

atggccttac	cagtgaccgc	cttgctcctg	ccgctggcct	tgctgctcca
cgccgccagg	ccgagccagt	tccgggtgtc	gccgctggat	cggacctgga
acctgggcga	gacagtggag	ctgaagtgcc	aggtgctgct	gtccaacccg
acgtcgggct	gctcgtggct	cttcagccg	cgcggcgccg	ccgccagtcc
caccttcctc	ctatacctct	cccaaaacaa	gccaaggcg	gccgaggggc
tggacacca	gcggttctcg	ggcaagaggt	tgggggacac	cttcgtcctc
accctgagcg	acttcgcgcg	agagaacgag	ggctactatt	tctgctcggc
cctgagcaac	tccatcatgt	acttcagcca	cttcgtgccg	gtcttcctgc
cagcgaagcc	caccacgacg	ccagcgccgc	gaccaccaac	accggcgccc
accatcgcgt	cgcagcccct	gtccctgcgc	ccagaggcgt	gccggccagc
ggcggggggc	gcagtgcaca	cgagggggct	ggacttcgcc	tgtgatatct
<u>acatctgggc</u>	<u>gcccttggcc</u>	<u>gggacttggtg</u>	<u>gggtccttct</u>	<u>cctgtcactg</u>
<u>gttatcacc</u>	<u>tttactgcaa</u>	<u>ccacaggaac</u>	<u>cgaagacgtg</u>	<u>tttgcaaagt</u>
tccccggcct	gtggtcaa	cgggagacaa	gccagcctt	tggcgagat
acgtctaa				

Figure 2A

mouse CD8 α -Chain

Protein:

MASPLTRFLS LNLLLLGESI ILGSGEAKPO APELRIFPKK MDAELGQKVD
LVCEVLGSVS QGCSWLFQNS SSKLPQPTFV VYMASSHNKI TWDEKLNSSK
LFSAMRDTNN KYVLTlnKFS KENEGYYFCS VISNSVMYFS SVVPVLQKVN
STTTKPVLRT PSPVHPTGTS QPQRPEDCRP RGSVKGTGLD FACDIYIWAP
LAGICVALLL SLIITLICyH RSRKRVCKCP SIACLCLKLQ GSKWYESVIC
SALAVSIRCn KSKSGELPLA VHLDIRAPCK NWEIAGSLVE RYGKSGKHSP
LSLKAVVESN

mRNA - Coding

atggcctcac cgttgacccg ctttctgtcg ctgaacctgc tgctgctggg
tgagtcgatt atcctgggga gtggagaagc taagccacag gcacccgaac
tccgaatcct tccaaagaaa atggacgccg aacttggtca gaaggtggac
ctggtatgtg aagtgttggg gtccgtttcg caaggatgct cttggctctt
ccagaactcc agctccaaac tccccagcc caccttcgtt gtctatatgg
cttcatocca caacaagata acgtgggacg agaagctgaa ttcgtcgaaa
ctgttttctg ccatgaggga cacgaataat aagtacgttc tcaccctgaa
caagttcagc aaggaaaacg aaggctacta tttctgctca gtcacagca
actcggatgat gtacttcagt tctgtcgtgc cagtccttca gaaagtgaac
tctactacta ccaagccagt gctgcgaact ccctcacctg tgcaccctac
cgggacatct cagccccaga gaccagaaga ttgtcggccc cgtggctcag
tgaaggggac cggattggac ttcgccctgtg atatttacat ctgggcaccc
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ctgctaccac aggagccgaa agcgtgtttg caaatgtccc agtatagcat
gcttgtgcct caaactgcaa ggaagcaagt ggtatgaatc tgtgatctgc
tcagctctgg ctgtgagcat cagatgtaac aaatcaaagt caggagaact
gccttttagcg gtgcacctgg acatcagagc cccttgtaag aactgggaaa
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ctgtcactga aggctgtagt agaatccaat taa

Figure 2B

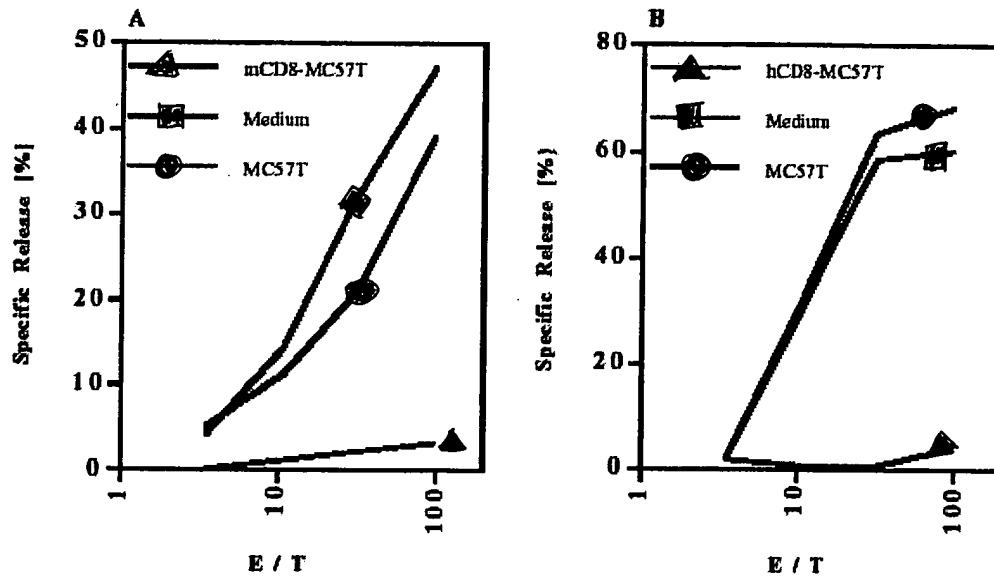
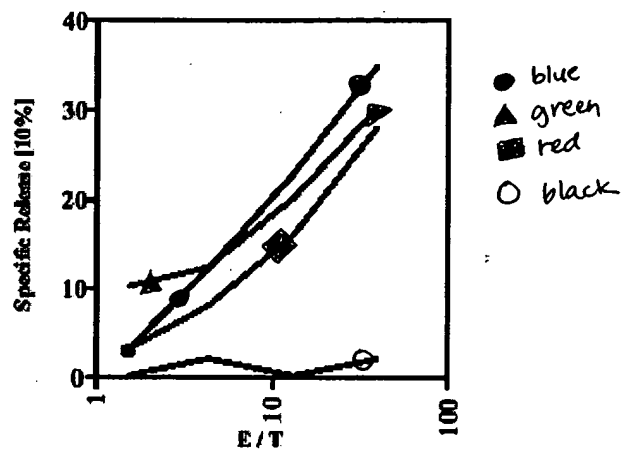


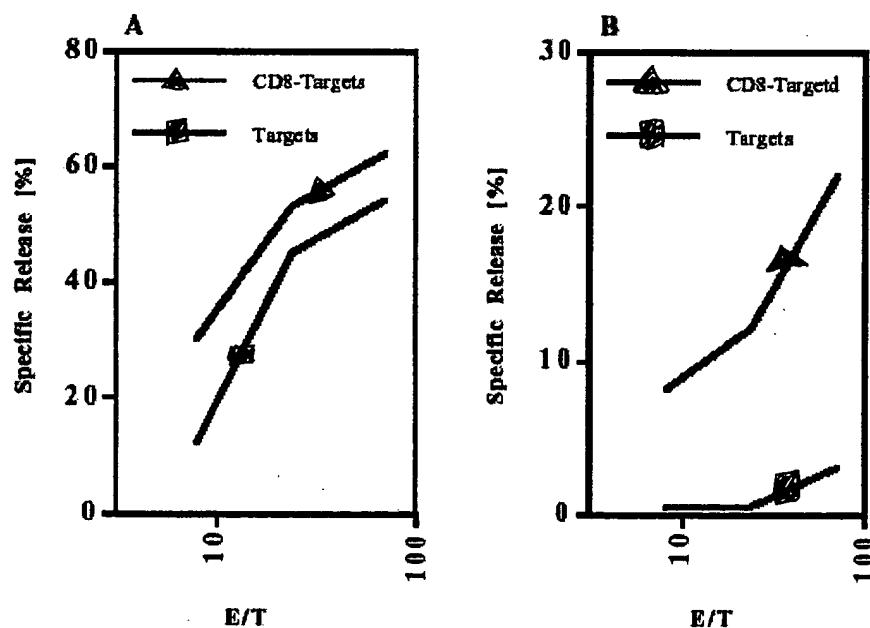
Figure 3: Balb/c spleen cells were stimulated with C57BL/6 spleen cells. Cultures were supplemented with normal fibroblasts (blue), medium (red) or fibroblasts with CD8 (green) of mouse (A) or human (B) origin. Cultures were harvested and tested for their lytic ability towards C57BL/6-derived target cells.

Figure 3



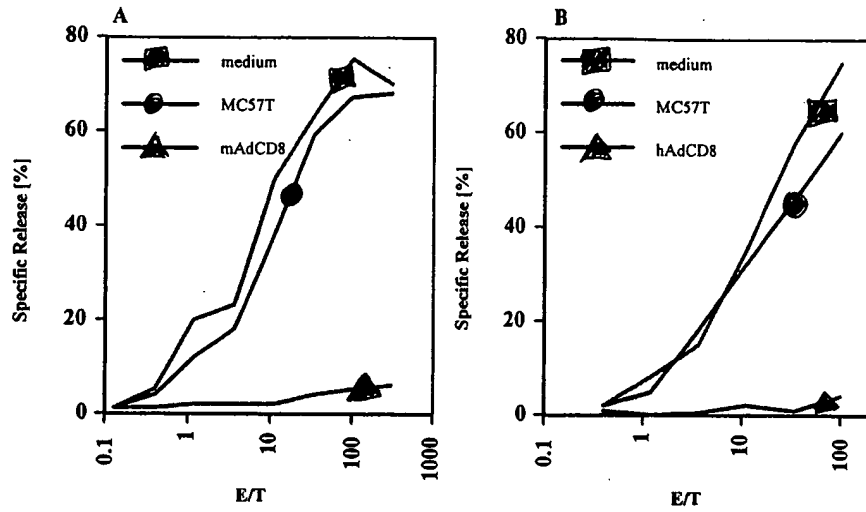
Balb/c (H-2d) mice were injected with control fibroblasts (red and green) or mCD8-transfected C57BL/6- (H-2b) derived (black and blue) fibroblasts. After two weeks animals were sacrificed, spleen cells were harvested, stimulated with C57BL/6 (H-2b) (red and black) or CBA/J (H-2k) (blue and green) spleen cells and tested for their lytic ability on EL4 (H-2b) (red and black) or S.AKR (H-2k) (blue and green) target cells.

Figure 4



Target cells (green) or CD8-expressing targets (red) were tested for their susceptibility to lysis by alloreactive T cells (A) or by antigen-specific CTLs (B).

Figure 5



circle MLCs (Balb/c anti-C57BL/6) were set up in the presence of normal fibroblasts (blue) and fibroblasts transduced with mAdCD8 (A, green) or hAdCD8 (B, green). No fibroblasts were added to control cultures (red). The lytic activity of these cultures towards an C57BL/6-derived target was determined at the end of the culture period. triangle

Figure 6



FIGURE 7

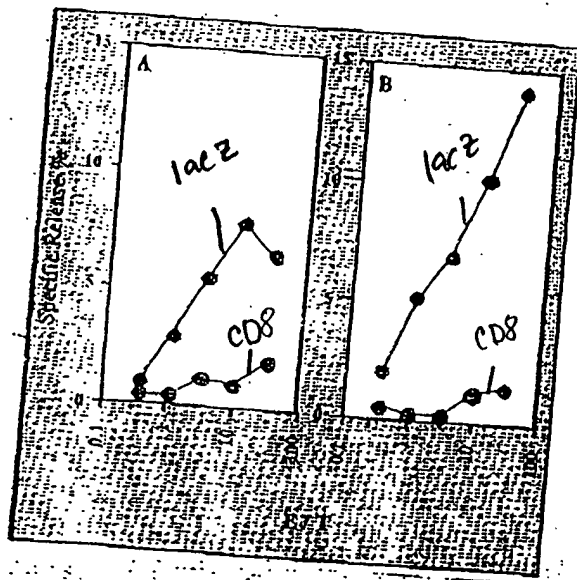
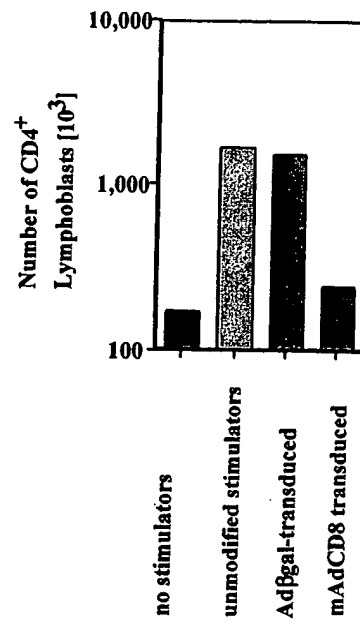


FIGURE 8



3×10^6 C7Bl/6 spleen cells were incubated with 1×10^6 (or no) stimulator cells, transduced as indicated. After 4 days the cultures were analyzed for presence CD4⁺ T lymphoblasts by immunofluorescence.

Figure 9

FIGURE 10A

Infected Cells: MC57T Fibroblasts
Panel 1: Mock-Infection; Panel 2: Infection with hAdCD8

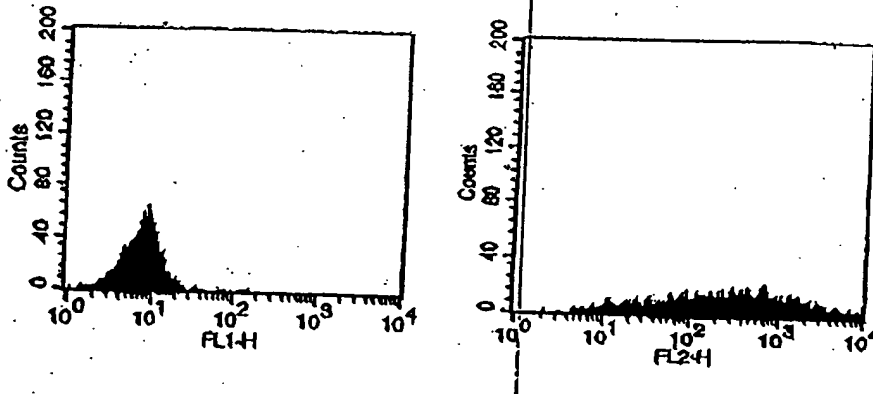


FIGURE 10B

Infected Cells: MC57T Fibroblasts
Panel 1: Mock-Infection; Panel 2: Infection with mAdCD8

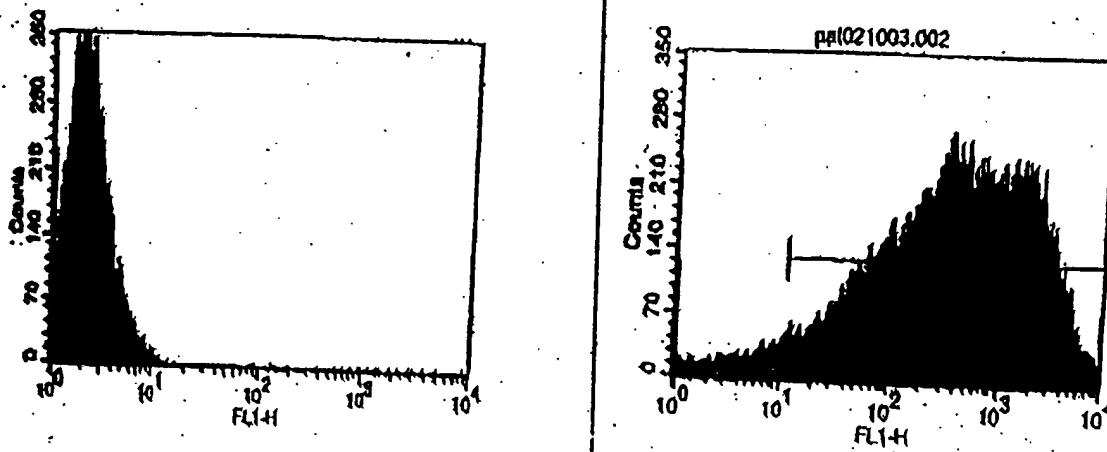


FIGURE 10C

Infected Cells: Balbo unselected bone marrow cells;
 Panel 1: Infection with lacZ/Adenoviral Vector (AdLacZ);
 Panel 2: Infection with mAdCD8

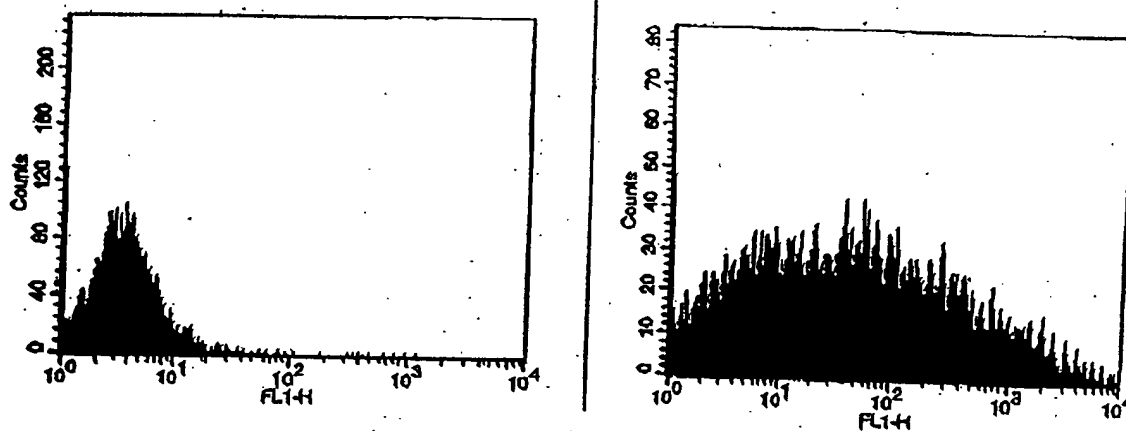
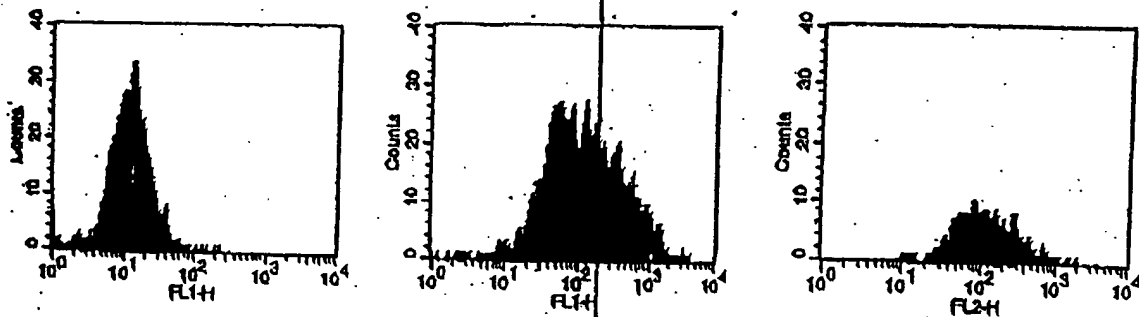
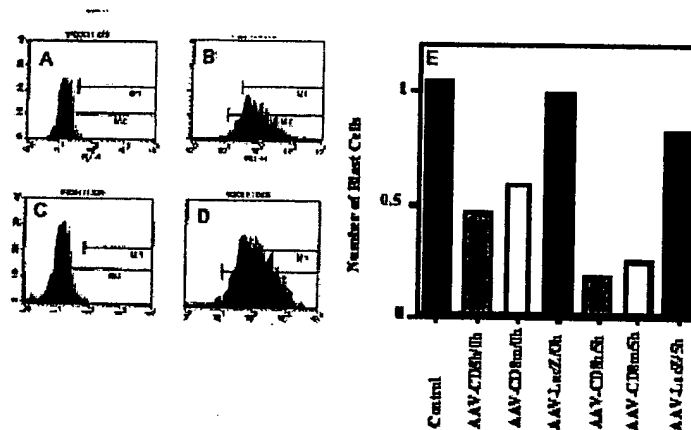


FIGURE 10D

Infected Cells: MC57T Fibroblasts
 Panel 1: Mock-Infection;
 Panel 2: Infection with pAAV-mCD8;
 Panel 3: Infection with pAAV-hCD8





Fibroblasts were transduced with mAAVCD8 (B) or hAAVCD8 (D) or mock-infected (A and C). Surface expression of CD8 was detected by surface immunofluorescence (A through D). MLCs (Balb/c anti-C57BL/6) were set up in the presence of these fibroblasts that had been cultured for 0 or 5 hours after transduction before they were added to the MLCs. At end of cultures, the number of lymphoblasts was determined on a fluorescence activated cell analyzer.

Figure 11

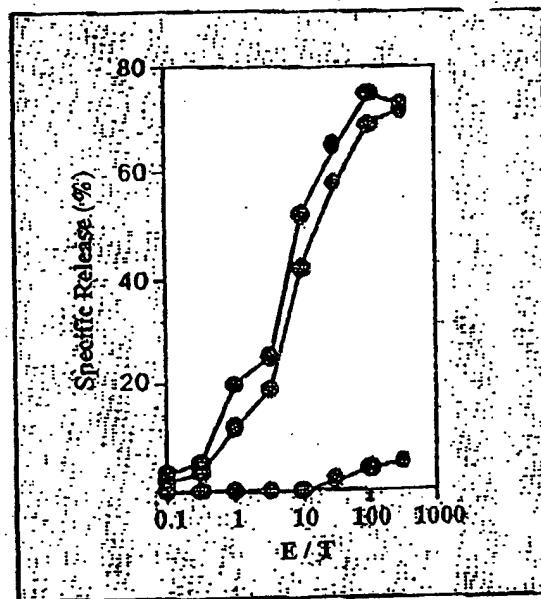
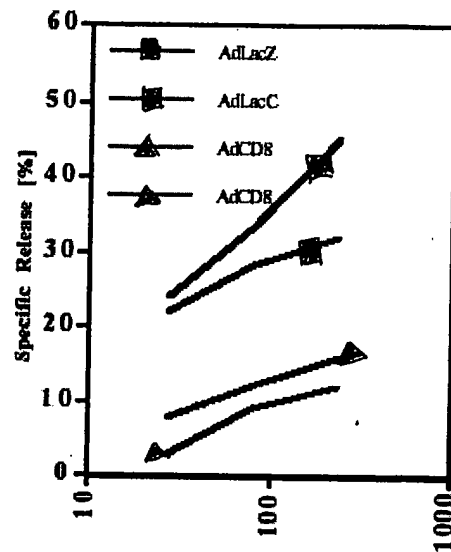
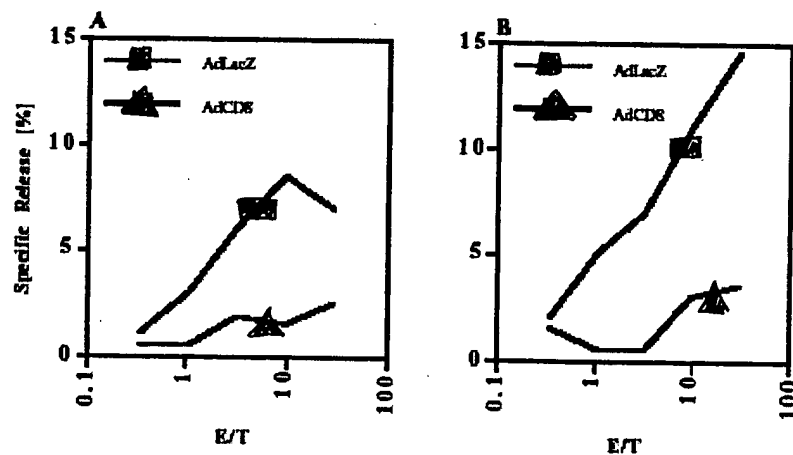


FIGURE 12



triangle Balb/c mice were immunized with AdLacZ (green) or mAdCD8 (red). Their spleen cells were cultured in the presence of AdLacZ and tested for specific lytic activity against AdLacZ-infected syngeneic P815 target cells.

Figure 13



(A) C57BL/6 animals were immunized with AdLacZ (red) or mAdCD8 (green). Their lytic activity of their spleen cells towards syngeneic AdLacZ EL4 target cells was tested. (B) Such animals were re-immunized with AdLacZ prior to testing their lytic activity against AdLacZ-infected EL4 targets.

Figure 14A-B

Figure 15

Hemoglobin β

mRNA

1 acatttgctt ctgacacaac tgtgttcaat agcaacctca aacagacacc atggtgcatc
61 tgactcctga ggagaagtct gccgttactg ccctgtgggg caaggagaac gtggatgaag
121 ttggtggtga ggccctgggc aggtgtctgg tggctaccc ttggaccagc aggttctttg
181 agtcctttgg ggatctgtcc actcctgatg ctgttatggg caaccctaag gtgaaggctc
241 atggcaagaa agtgctcggg gccttagtg atggcctggc tcacctggac aacctcaagg
301 gcaccttgc cacactgagt gagctgcact gtgacaagct gcacgtggat cctgagaact
361 tcaggctcct gggcaacgtg ctggctctgt tgctggcca tcacttggc aaagaattca
421 cccaccagt gcaggctgcc taccagaaag tggaggctgg tgggctaata gccctggccc
481 acaagtatca ctaagctgc tttctgtg tccaattct attaaagggt ccttgttcc
541 ctaagtccaa ctactaaact gggggatatt atgaagggcc ttgagcatct ggattctgcc
601 taataaaaaa cattatatt cattgc

Figure 16
GATA-binding protein

mRNA

1 gcaaaggcca aggccagcca ggacaccccc tggatcaca ctgagctgc cacatcccca
61 aggcggccga accctccgca accaccagcc caggttaac cccagaggct ccatggagtt
121 ccttgccctg gggccctgg ggacdcaga gccctcccc cagtttggtg atcctgctct
181 ggtgtcctcc acaccagaat caggggtttt ctcccctct gggcctgagg gcttgatgc
241 agcagcttcc tcactgccc cgagcacagc caccgtgca gctgcggcac tggcctaacta
301 cagggagcgt gaggcctaca gacactcccc agtcttcag gtgtacccat tgcataactg
361 tatggagggg atcccagggg gctcaccata tgccggtgg gcctacggca agacggggct
421 ctacctgcc tcaactgtgt gtcccacccg cgaggactct cctcccagg ccgtggaaga
481 tctgatgga aaaggcagca ccagcttct ggagacttg aagacagagc ggtgagccc
541 agacctcctg accctgggac ctgcactgcc ttcatcactc cctgtcccca atagtctta
601 tgggggacct gactttcca gtacctct tctcccacc gggagcccc tcaattcagc
661 agcctattcc tctccaagc ttgtggaac tctccccctg cctccctgtg aggccaggga
721 gtgtgtgaac tggggagcaa cagccactcc actgtggcgg agggacagga caggccacta
781 cctatgaac gcctgcggcc tctatcaca gatgaatggg cagaacaggc cctcatccg
841 gcccaagaag cgctgattg tcagtaaagc ggcaggtact cagtgcacca actgccagac
901 gaccaccagc acactgtggc ggagaaatgc cagtggggat cccgtgtgca atgcctgcgg
961 ccttactac aagctacacc aggtgaaccg gccactgacc atgcggaagg atggtattca
1021 gactcgaac cgcaaggcat ctggaagg gaaaaagaa cggggctcca gtdgggagg
1081 cacaggagca gccgaaggac cagctggtgg cttatggtg gtgctgggg gcagcggtag
1141 cyggaattgt ggggaggtgg cticaggcct gacactgggc ccccaggta ctgccatct
1201 ctaccaagc ctgggccctg tggctgtgc agggcctgtt agccacctca tgcctttccc
1261 tggaccocct ctgggtcac ccacgggctc ctcccaca ggcccatgc cccccaccac
1321 cagcactact gtgtggctc cgctcagctc atgaggcac agagcatggc ctccagagga
1381 ggggtgtgt ccttctctc ttgtagccag aattctggac aaccaagtc tctggcccc
1441 aggcaccccc tggctgaac ctcaaaagt ttgtaaaat aaaaccacca aagtctgaa
1501 aaaaaaaaaa aaaaaaaaaa aa

FIGURE 17

d-aminoevulinate synthase

mRNA

1 cacctgtcat tcgttcgtcc tcagtcagg gcaacaggac ttaggttca agatggtgac
61 tgcagccatg ctgtacagt gctgccagt gctgcccgg gggccacaa gcctcctagg
121 caaggtggtt aagactcacc agttcctgtt tggatttga cgctgtcca tcttggtac
181 ccaaggacca aactgttctc aaatccacct taaggcaaca aaggctggag gagattctcc
241 atcttgggcg aagggccact gtcccttcat gctgtcggaa ctccaggatg ggaagagcaa
301 gattgtgcag aaggcagccc cagaagtcca ggaagatgtg aaggcttca agacagatct
361 gcctagctcc ctggtctcag tcagcctaag gaagccattt tccgtcccc aggagcagga
421 gcagatctct gggaaggta cacacctgat tcagaacaat atgcctggaa actatgtctt
481 cagttatgac cagttttca gggacaagat catggagaag aaacaggatc acacctaccg
541 tgtgttaag actgtgaacc gctgggctga tgcataccc ttgcccac atttcttga
601 ggcatctgtg gcctcaaagg atgtgtccgt ctggtgtagt aatgattacc tgggcatgag
661 ccgacacctt caggtcttc aagccacaca ggagacctg cagcgtcatg gtgctggagc
721 tgggtggacc cgcaacatct caggcaccag taagtttcat gtggagcttg agcaggagct
781 ggctgagctg caccagaagg actcagccct gctcttctcc tctgtcttg ttgccaatga
841 ctctactctc ttacacttgg ccaagatcct gccagggtgc gagatttact cagacgcagg
901 caaccatgct tccatgatcc aaggtatccg taacagtgga gcagccaagt ttgtcttcag
961 gcacaatgac cctgaccacc taaagaaact tctagagaag tctaacccta agatacccaa
1021 aattgtggcc ttgagactg tccactccat ggatggtgcc atctgtcccc tcgaggagtt
1081 gtgtgatgtg tcccaccagt atggggccct gaccttcgtg gatgaggtcc atgtgtagg
1141 actgtatggg tcccggggcg ctgggattgg ggagcgtgat ggaattatgc ataagattga
1201 catcatctct ggaactcttg gcaaggcctt tggctgtgtg ggcggtaca ttgccagcac
1261 ccgtgacttg gtggacatgg tgcgtccta tctgcaggc ttcatctta ccacttctct
1321 gcccccatg gtgctctctg gagctctaga atctgtcgg ctgctcaagg gagaggaggg
1381 ccaagccctg aggcgagccc accagcgcaa tgtcaagcac atgcgccagc tactcatgga
1441 caggggcctt cctgtcatcc cctgcccag ccacatcatc cccatccggg tgggcaatgc
1501 agcactcaac agcaagctct gtgatctct gctctcaag catggcatct atgtgcaggc
1561 catcaactac ccaactgtcc cccgggggtga agagctcctg cgcttgccac cctccccca

1621 ccacagccct cagatgatgg aagattttgt ggagaagctg ctgctggcct ggactgcggt

1681 ggggctgccc ctccaggatg tgtctgtggc tgcctgcaat ttctgtcgcc gtccgtaca

1741 cttgagctc atgagtgagt gggaacgttc ctactcggg aacatggggc ccagtatgt

1801 caccacctat gcctgagaag ccagctgcct aggattcaca cccacctgc gcttcacttg

1861 ggtccagggc tactcctgtc ttctgcttg ttgtgtgcct ctagctgaat tgagcctaaa

1921 aataaagcac aaaccac

Figure 18

Glucose-6-phosphate-dehydrogenase

mRNA

1 agggacagcc cagaggaggc gtggccacgc tgccggcgga agtggagccc tccgcgagcg
61 cgcgaggccg ccggggcagg cggggaaacc ggacagtagg ggcggggccc ggccggcgat
121 ggggatgcgg gagcactacg cggagctgca cccgtgcccg ccggaattgg ggatgcagag
181 cagcggcagc gggatggca ggcagccggc gggccggcct ccagcgcagg tgcccagag
241 gcaggggctg gcctgggatg cgcgcgcacc tgccctcgcc ccgccccgcc cgcacgaggg
301 gtggtggccg aggccccgcc cgcacgcct cgctgaggc gggtcgctc agcccaggcg
361 cccgccccg cccccgccga ttaaatgggc cggcggggct cagccccgg aaacggctgt
421 aactcgggg ctgcgagcgc ggagggcgac gacgacgaag cgacagacgc gtcattggcag
481 agcaggtggc cctgagccgg acccaggtgt gcgggatcct gcgggaagag ctttccagg
541 gcgatgcctt ccatcagtcg gatacacaca tattcatcat catgggtgca tcgggtgacc
601 tggccaagaa gaagatctac ccacacatct ggtggctgtt ccgggatggc ctctgcccg
661 aaaacacctt catcgtgggc tatgcccgtt cccgcctcac agtggctgac atccgaaac
721 agagttagcc ctcttcaag gccaccccag aggagaagct caagctggag gacttcttg
781 cccgcaactc ctatgtggct ggccagtacg atgatgcagc ctctaccag cgcctcaaca
841 gccacatgga tgccctcac ctggggtcac aggccaaacc cctctctac ctggcctgc
901 cccgaccgt ctacgagcc gtcaccaaga acattcacga gtctgcatg agccagatag
961 gctggaaccg catcatcgtg gagaagccct tcgggagggc cctgcagagc tctgaccggc
1021 tgtcaacca catctctcc ctgtccgtg aggaccagat ctaccgcac gaccactacc
1081 tgggcaagga gatggtgcag aacctcatgg tctgagatt tgccaacagg atctcggcc
1141 ccatctggaa ccgggacaac atcgctgcg ttatctcac ctcaaggag cccttggca
1201 ctgagggctg cgggggctat ttcgatgaat ttggatcat ccgggacgtg atgcagaacc
1261 acctactgca gatgctgtgt ctggtggcca tggagaagcc cgctccacc aactcagatg
1321 acgtccgtga tgagaagtc aaggtgtga aatgcatctc agaggtcag gccacaatg
1381 tggctcctgg ccagtacgtg ggaaccccc atggagaggg cgaggccacc aaagggtacc
1441 tggacgacc caggtgccc cgggggtcca ccaccgccac tttgcagcc gtcgtcctt
1501 atgtggagaa tgagaggtgg gatggggtgc cctcatcct gcgctcggc aaggccctga

1561 acgagcgcaa ggccgagggtg aggctgcagt tccatgatgt ggccggcgac atctccacc
1621 agcagtgcaa gcgcaacgag ctggtgatcc gcgtgcagcc caacgaggcc gtgtacacca
1681 agatgatgac caagaagccg ggcatgttct tcaaccccgga ggagtcggag ctggacctga
1741 cctacggcaa cagatacaag aacgtgaagc tcctgacgc ctacgagcgc ctcatcctgg
1801 acgtctctg cgggagccag atgcacttcg tgcgcagcga cgagctccgt gaggcctggc
1861 gtattttcac cccactgctg caccagattg agctggagaa gccaagccc atcccctata
1921 ttatggcag ccgaggcccc acggaggcag acgagctgat gaagagagtg ggttccagt
1981 atgagggcac ctacaagtgg gtgaaccccc acaagctctg agccctgggc acccacctcc
2041 acccccgcca cgccaccct cctcccgcc gcccgacccc gagtcgggag gactccggga
2101 ccattgacct cagctgcaca ttctggccc cgggctctgg ccacctggc cggcccctg
2161 ctgtgtctac taccgagcc cagctacatt cctcagctgc caagcactcg agaccatcct
2221 ggcccctcca gacctgcct gagccagga gctgagtcac ctctccact cactccagcc
2281 caacagaagg aaggaggagg gcgcccattc gtctgtcca gagctattg gccactgggt
2341 ctactcctg agtggggcca gggggaggagg gagggacaag ggggaggaaa ggggcgagca
2401 cccacgtgag agaatctgcc tgtggcctg cccgccagcc tcagtccac ttgacattcc
2461 ttgtcaccag caacatctcg agccccctgg atgtccctg tccaccaac tctgcactcc
2521 atggccaccc cgtgccaccc gtaggcagcc tctctgtat aagaaaagca gacgcagcag
2581 ctgggacccc tccaacctc aatgccctgc cattaaatcc gcaaacagcc aaaaaaaaaa
2641 aaaaaaaaaa

Figure 19

Ornithine carbamoyl transferase

mRNA

1 gagccccagg actgagatat ttactata ccttctctat catctgcac ccccaaaata
61 gcttccaggg cacttctatt tgttttggtg gaaagactgg caattagagg tagaaaagtg
121 aaataaatgg aaatagtact actcagggct gtcacatcta catctggtt ttgcagtg
181 caattgcat ttctgagtg agttactct actcacctc acagcagcca gtaccgcagt
241 gcctgcata tattatacc tcaatgagta ctgtcaatt gatttgtac atgcgtgtga
301 cagtataaat atattatgaa aatgaggag gccaggcaat aaaagagtca ggatttctc
361 caaaaaaat acacagcggg ggagcttggc ataaagtca aatgctcta caccctgcc
421 tgcagtatct ctaaccaggg gacttgata aggaagctga aggggatgat taccttgct
481 cctcactgc aactgaacac atttcttagt ttttaggtgg ccccgctgg ctaactgct
541 gtggagttt caagggcata gaatcgtct ttacacaatt aaaagaagat gctgttaat
601 ctgaggatcc tgtaaacaa tgcagcttt agaaatggc acaactcat ggtcgaaat
661 ttccggtgtg gacaaccact acaaaataaa gtgcagctga agggccgtga ctttcact
721 ctaaaaaact ttaccggaga agaaataaa tatatgctat ggctatcagc agatctgaa
781 tttaggataa aacagaaagg agagtattg ctttatgic aagggaagtc ctaggcatg
841 attttgaga aaagaagta tcgaacaaga ttgtctacag aaacaggctt tgcactctg
901 ggaggacatc ctgttttct taccacacaa gatattcatt tgggtgtgaa tgaaagtctc
961 acggacacgg cccgtgtatt gtctagcatg gcagatgcag tattggctcg agtgtataaa
1021 caatcagatt tggacaccct tgctaaagaa gcatccatcc caattatcaa tgggctgtca
1081 gatttgtacc atcctatcca gatctggct gattacctca cgctccagga aactatagc
1141 tctctgaaag gtctaccct cagctggatc ggggatggga acaatctct gcactccatc
1201 atgatgagcg cagcgaaatt cggaatgcac ctcaggcag ctactcaaa gggttatgag
1261 ccggatgcta gtgtaacaa gtggcagag cagtatgcca aagagaatgg taccaagctg
1321 ttctgacaa atgatccatt ggaagcagcg catggaggca atgtattaat tacagacact
1381 tggataagca tgggacaaga agaggagaag aaaaagcggc tccaggctt ccaagggtac
1441 caggttaca tgaagactgc taaagtgct gcctctgact ggacatttt acactgctg
1501 ccagaaagc cagaagaagt ggaatgatga gtcttttatt ctctcgatc actagtgtc

1561 ccagaggcag aaaacagaaa gtggacaatc atggctgtca tgggtccct gctgacagat

1621 tactcacctc agctccagaa gcctaaattt tgatgttg tg ttactgtca agaaagaagc

1681 aatgttctc agtaacagaa tgagttggtt tatggggaaa agagaagaga atctaaaaaa

1741 taaacaaatc cctaacacgt ggtatgggtg aaccgtatga tatgcttgc catttgaaa

1801 cttccttaa gccttaatt taagtgtga tgcactgtaa tacgtgctta actttgctta

1861 aactctctaa ttccaattt ctgagttaca tttagatac atattaatta tcatatacat

1921 ttacttc

Figure 20

α -L-iduronidase

mRNA

1 gtcacatggg gtgcgcgcc agactccgac ccggaggcgg aaccggcagt gcagcccgaa
61 gccccgcagt ccccgagcac gcgtggccat gcgtcccctg cgtcccccgc cgcgcctgct
121 ggcgctctctg gcctcgctcc tggccgcgcc cccggtggcc ccggccgagg ccccgcacct
181 ggtgcagggtg gacgcggccc gcgcgctgtg gcccctgcgg cgcttctgga ggagcacagg
241 cttctgcccc ccgtgccac acagccaggc tgaccagtac gtccctcagct gggaccagca
301 gctcaacctc gcctatgtgg gcgcgctccc tcaccgcggc atcaagcagg tccggacca
361 ctggctgctg gagcttgta ccaccagggg gtccactgga cggggcctga gctacaact
421 caccacctg gacgggtact tggacctct cagggagaac cagctctcc cagggttga
481 gctgatgggc agcgcctcgg gccacttcac tgactttgag gacaagcagc aggtgttga
541 gtggaaggac ttggtctcca gcctggccag gagatacatc ggtaggtacg gactggcgca
601 tgttccaag tggaactcg agacgtggaa tgagccagac caccacgact ttgacaacgt
661 ctcatgacc atgcaaggct tctgaacta ctacgatcc tgctcggagg gtctgcgcgc
721 cgccagcccc gccctgcggc tgggaggccc cggcgactcc ttccacacc caccgcgatc
781 cccgctgagc tggggcctcc tgcgccactg ccacgacggt accaacttct tactgggga
841 ggcgggcgctg cggctggact acatctccct ccacaggaag ggtgcgcgca gctccatctc
901 catcctggag caggagaagg tcgtcgca gcagatccg cagctctcc ccaagttgc
961 ggacaccccc atttacaacg acgaggcgga cccgctggtg ggctggctcc tgccacagcc
1021 gtggaggcg gacgtgacct acgcgccat ggtggtgaag gtcatcgcg agcatcagaa
1081 cctgctactg gccaacacca cctccgcctt cccctacgg ctctgagca acgacaatgc
1141 cttctgagc taccaccgc accccttcgc gcagcgacg ctcaccgcgc gttccaggt
1201 caacaacacc cggccgcgc acgtgcagct gttgcgaag ccggtgtca cggccatggg
1261 gctgctggcg ctgctggatg aggagcagct ctgggcccga gtgtgcagg ccgggaccgt
1321 cctggacagc aaccacacgg tgggcgtctt ggccagcgcc caccgcccc agggcccgcc
1381 cgacgcctgg cgcgccggg tgctgatcta cgcgagcgac gacacccgcg cccacccaa
1441 ccgcagcgtc gcggtgacct tgcggctgcg cggggtgccc cccggcccg gcctggtcta
1501 cgtcacgcgc tacctggaca acgggctctg cagccccgac ggcgagtggc ggcgcctggg

1561 ccggcccgtc ttccccacgg cagagcagtt ccggcgcatg cgcgcggctg aggacccggt
1621 ggccgcggcg ccccgccctt taccgcgg cgccgcctg accctgcgcc ccgcgctgcg
1681 gctgccgtcg ctttgctgg tgcacgtgtg tgcgcgccc gagaagccgc ccgggcaggt
1741 cacgcggctc cgcgccctgc ccctgacca agggcagctg gtctgtgt gtctggatga
1801 acacgtgggc tccaagtgc tgtggacata cgagatccag ttctctcagg acggaaggc
1861 gtacaccccg gtcagcagga agccatcgac ctcaacctc ttgtgtca gccagacac
1921 aggtgctgtc tctggctcct accgagttcg agccctggac tactggggcc gaccaggccc
1981 cttctggac cctgtgccgt acctggaggt ccctgtgcca agagggccc catccccggg
2041 caatccatga gcctgtgctg agccccagtg ggtgcacct ccaccggcag tcagcgagct
2101 ggggctgcac tgtgccatg ctgccctcc atcacccct ttgcaatata ttttatatt
2161 ttattatatt ctttataatc ttgtaaaaa aaaaaaa

Figure 21

β-glucosidase

mRNA

1 gctaacctag tgcctatagc taaggcaggt acctgcatcc ttgttttgt ttagtgatc
61 ctctatcctt cagagactct ggaacccctg tggctcttc tcatctaata gaccctgagg
121 ggatggagtt tcaagtcct tccagagagg aatgtccaa gccttgagt agggtaagca
181 tcatggctgg cagcctcaca gggttgcttc tacttcaggc agtgctggtg gcatcagggtg
241 cccgccccctg catccctaaa agcttcggct acagctcggg ggtgtgtgtc tgcaatgcca
301 catactgtga ctctttgac ccccgacct ttctgccct tggatccttc agccgctatg
361 agagtacacg cagtgggcga cggatggagc tgagtatggg gccatccag gctaatacaca
421 cgggcacagg cctgctactg accctgcagc cagaacagaa gttccagaaa gtgaagggat
481 ttgagggggc catgacagat gctgctgctc tcaacatctt tgccctgtca cccctgccc
541 aaaatttct acttaaatc tacttctctg aagaaggaat cggatataac atcatccggg
601 taccatggc cagctgtgac ttctcatcc gcacctacac ctatgcagac accctgatg
661 attccagtt gcacaacttc agcctcccag aggaagatac caagctcaag ataccctga
721 ttaccgagc cctgcagttg gccagcgtc ccgttcact ccttgccagc cctggacat
781 caccacttg gctcaagacc aatggagcgg tgaatgggaa ggggtcactc aaggagacg
841 ccggagacat ctaccaccag acctgggcca gatacttgt gaagttctg gatgcctatg
901 ctgagcaca gttacagttc tgggcagtga cagctgaaa tgagcctct gctgggctgt
961 tgagtggata cccctccag tgccctgggt tcaccctga acatcagcga gacttcattg
1021 cccgtgacct aggtcctacc ctgcacaaca gtactacca caatgtccgc ctactcatg
1081 tggatgacca acgctgtctg ctgccccact gggcaaagg ggtactgaca gaccagaag
1141 cagctaaata tgtcatggc attgctgtac attggtacct ggactttctg gctccagcca
1201 aagccacct aggggagaca caccgcctgt tcccaaacac catgctctt gcctcagagg
1261 cctgtgtggg ctcaagttc tgggagcaga gtgtgcggct aggtcctgg gatcgaggga
1321 tgcagtacag ccacagcatc atcacgaacc tctgtacca tgggtcggc tggaccgact
1381 ggaacctgc cctgaacccc gaaggaggac ccaattgggt gcgtaacttt gtcgacagtc
1441 ccatcattgt agacatcacc aaggacacgt ttacaaaca gccatgttc taccacctg
1501 gccacttcag caagttcatt cctgagggt cccagagagt ggggctgggt gccagtcaga

1561 agaacgacct ggacgcagtg gcactgatgc atcccgatgg ctctgctgtt gtggctgtgc
1621 taaaccgctc ctctaaggat gtgcctctta ccatcaagga tcctgctgtg ggcttcctgg
1681 agacaatctc acctggctac tccattcaca cctacctgtg gcatcgccag tgatggagca
1741 gatactcaag gaggcactgg gctcagcctg ggcattaaag ggacagagtc agctcacacg
1801 ctgtctgtga ctaaagaggg cacagcaggg ccagtgtag cttacagcga cgtaagccca
1861 ggggcaatgg ttgggtgac tcactttccc ctctaggtgg tgcccagggc tggaggcccc
1921 tagaaaaaga tcagtaagcc ccagtgcccc ccagcccc atgcttatgt gaacatgcgc
1981 tgtgtgctgc ttgctttgga aactngcctg ggtccaggcc tagggtgagc tactgtccg
2041 taaaaacaca agatcagggc tgagggtgag gaaaagaaga gactaggaaa gctgggcccc
2101 aaactggaga ctgtttgtct ttctagaga tgcagaactg ggcccgtgga gcagcagtgt
2161 cagcatcagg gcggaagcct taaagcagca gcgggtgtgc ccaggcacc agatgattcc
2221 tatggacca gccaggaaaa atggcagctc ttaaaggaga aaatgtttga gcccc

Figure 22

α -galactosidase

mRNA

1 aggttaatct taaaagccca ggttaccgc ggaaatttat gctgtccggt caccgtgaca
61 atgcagctga ggaaccaga actacatctg ggctgcgcgc ttgcgctcg ctctctggcc
121 ctggttctt gggacatccc tggggctaga gcactggaca atggattggc aaggacgcct
181 accatgggct ggctgcactg ggagcgcttc atgtgcaacc ttgactgcca ggaagagcca
241 gattcctgca tcagtgagaa gctcttcag gagatggcag agctcatggt ctcagaaggc
301 tggaaggatg caggttatga gtacctctgc attgatgact gttgatggc tcccaaaga
361 gattcagaag gcagactca ggcagaccct cagcgcttc ctcatgggat tcgccagcta
421 gctaattatg ttcacagcaa aggactgaag ctagggtatt atgcagatgt tggaaataaa
481 acctgcgcag gcttccctgg gagtttggga tactacgaca ttgatgcca gacctttgct
541 gactggggag tagatctgct aaaattgat ggtgttact gtgacagttt ggaaaattg
601 gcagatggtt ataagcacat gtcttggcc ctgaatagga ctggcagaag cattgtgtac
661 tcctgtgagt ggctcttta tatgtggccc ttcaaaagc ccaattatac agaaatccga
721 cagtactgca atcactggcg aaattttgct gacattgatg attcctggaa aagtataaag
781 agtatcttgg actggacatc tttaaccag gagagaattg ttgatgtgc tggaccaggg
841 ggttgaatg accagatat gttagtatt ggcaactttg gcctcagctg gaatcagcaa
901 gtaactcaga tggccctctg ggctatcatg gctgctcctt tattcatgtc taatgacctc
961 cgacacatca gccctcaagc caaagctctc cttcaggata aggacgtaat tgccatcaat
1021 caggaccctt tgggcaagca aggttaccag cttagacagg gagacaactt tgaagtgtg
1081 gaacgacctc tctcaggctt agcctgggct gtagctatga taaaccggca ggagattggt
1141 ggacctcgct ctataccat cgcagttgct tcctgggta aaggagtggc ctgtaatcct
1201 gcctgttca tcacacagct cctccctgtg aaaaggaagc tagggttcta tgaatggact
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